MOBILE COMMUNICATION APPARATUS WITH A SECURITY FUNCTION AND A METHOD OF COMMUNICATING WITH A BASE STATION WITH SECURITY

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a mobile communication apparatus with a security function and a method of communicating with a base station with security.

2. Description of the Prior Art

A mobile communication apparatus is known, which can receive a call from a base station and can transmit a call from the base station while it moves. A mobile communication apparatus having a paging function is also known.

SUMMARY OF THE INVENTION

The aim of the present invention is to provide an improved mobile communication apparatus and an improved method of communicating with a base station.

According to the present invention there is provided a radio communication apparatus which comprises: a radio wave signal communication circuit for receiving from and transmitting a radio wave signal to a base station; a communication circuit for providing communication to an operator through the radio wave signal receiving and transmission circuit; a speed detecting circuit for detecting a speed of the radio communication apparatus to the base station from an output of the radio wave signal communication circuit; a comparing circuit for comparing the detected speed with a reference; and a control circuit responsive to the comparing circuit for controlling the communication circuit when the detected speed exceeds the reference.

In the radio communication apparatus, the speed detecting circuit may comprise: a measuring circuit for measuring an electrostatic field intensity of the received radio wave signal in response to a timing signal; a storing circuit for repeatedly storing recent predetermined sets of output data from the measuring circuit; a variation detection circuit for detecting a variation in the recent predetermined sets of output data to generate a speed signal from the detected variation; and a timing control circuit for generating a timing signal in accordance with the speed signal.

In the radio communication apparatus, the communication circuit may further comprise a call detection circuit for detecting a call from the base station via the radio wave signal communication circuit, wherein the control circuit neglects the detected call when the detected speed exceeds the reference.

In the radio communication apparatus, the communication circuit may further comprise an operation circuit for receiving a dialing operation to make a call to the base station via the radio wave signal communication circuit, wherein the control circuit inhibits the communication circuit from making the call when the detected speed exceeds the reference.

In the radio communication apparatus, the communication circuit may further comprise a sound alarming circuit for generating an alarming sound, wherein the control circuit operates the sound alarming circuit to generate the alarming sound when the detected speed exceeds the reference. In this case, the sound alarming circuit may further comprise a sound message storing circuit for storing a predetermined sound alarming message data, wherein the control circuit reads and reproduces the predetermined sound alarming message data by the speaker when the detected speed exceeds the reference.

In the radio communication apparatus, the communication circuit may further comprise a character data storing circuit for storing a predetermined character alarming message data and a display, wherein the control circuit reads and displays the predetermined character alarming message data on the display when the detected speed exceeds the reference.

In the radio communication apparatus, the communication circuit may comprise a message storing circuit for storing message and call detection circuit for detecting a call from the base station and the control circuit reads and transmits the predetermined message to a caller of the call via the base station when the detected speed exceeds the reference.

In the radio communication apparatus, the communication circuit may comprise a vibrator for vibrating a housing of the radio communication apparatus, wherein the control circuit operates the vibrator to provide vibrations of the housing to the bearer of radio communication apparatus when the detected speed exceeds the reference.

In the radio communication apparatus, the communication circuit may comprise a call detection circuit for detecting a call from the base station and a buzzer for informing the user of the detected call, wherein the control circuit controls a sound intensity of a sound from the buzzer when the detected speed exceeds the reference.

In the radio communication apparatus, the communication circuit may comprise a call detection circuit for detecting a call from the base station and automatic answering circuit, having a memory, for transmitting a predetermined out-going message through the radio wave signal communication circuit and recording a message from the base station and the control circuit operates the automatic answering circuit to record the massage from the caller in response to the detected call when the detected speed exceeds the reference.

In the radio communication apparatus, the communication circuit may comprise a paging signal detection circuit for detecting a paging signal including a message from the radio wave signal from the base station and storing circuit, wherein the control circuit stores the message in storing circuit when the detected speed exceeds the reference.

In the radio communication apparatus, the communication circuit may comprise a call detection circuit for detecting a call from the base station and sound processing circuit including first amplifier for receiving and amplifying a first sound from an operator with a first gain and second amplifier for amplifying a sound signal from the base station with a second gain, wherein the control circuit increases first and second gains to provide a hands-free communication to the operator in response to the detected call when the detected speed exceeds the reference.

In the radio communication apparatus, the communication circuit may comprise a call detection circuit for detecting a call from the base station, a storing circuit, a telephone number data detection circuit for detecting telephone number data from the received radio wave signal, and a one-touch dialing circuit having a one-touch dial key, wherein the control circuit operates the telephone number data detection circuit in response to the detected call when the detected speed exceeds the reference and stores the detected telephone number data in the storing circuit and in response to an operation the one-touch dialing key, the control circuit operates the communication circuit to transmit a dialing signal using the telephone number data from the storing circuit.